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Atty. Docket No. 8027-1027

PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Tomohiro KUSANAGI

Confirmation No. 1399

Serial No. 09/767,149

GROUP 2675

Filed January 23, 2001

Examiner Doon Y. Chow

LIQUID CRYSTAL DISPLAY DEVICE FOR
PREVENTING AN AFTERIMAGE

RESPONSE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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JUL 22 2003
Technology Center 2600

Sir:

This replies to the Official Action of March 13, 2003.

Claims 1-2 and 4-7 were rejected as anticipated by YASUI et al. 5,248,963. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 1 and 7 provide, among other features, that when at least one of the video signal, horizontal synchronization signal, and vertical synchronization signal is no longer being input to the liquid crystal display device, all the gate lines are activated and the common electrode potential is applied to the data lines. This will discharge the display capacitance and help prevent formation of an afterimage. The Official Action indicates that this is inherent in the YASUI et al. device.

YASUI et al. disclose a device (Figure 1) that includes

a liquid crystal display panel 10 that receives inputs from gate bus drive circuit 17 and source bus drive circuit 16. The horizontal synchronization signal Hs and vertical synchronization signal Vs are input to gate bus drive circuit 17 and data (video) signal D is input to source bus drive circuit 16. Power for the device is provided at V1. As shown in Figure 5, voltage drop detector 24 detects when power V1 is turned OFF. Voltage drop detector 24 is not associated with horizontal synchronization signal Hs and vertical synchronization signal Vs and does not detect when they are no longer being input. The Official Action presumes that turning V1 OFF would also stop the input of data signal D, horizontal synchronization signal Hs and vertical synchronization signal Vs.

However, this conclusion is not supported by YASUI et al. As is apparent, these signals could still be input to the device even when the power is OFF (they may not be doing anything, but they are still being input). These signals are unrelated to the power. It is not inherent that the input of the video signal, horizontal synchronization signal, and vertical synchronization signal will stop when the power is turned OFF. That is, YASUI et al. senses and responds to the power input, regardless of the status of the synchronization and video signal inputs.

As explained in the present application, one of the problems with the prior art was that in some devices the power is

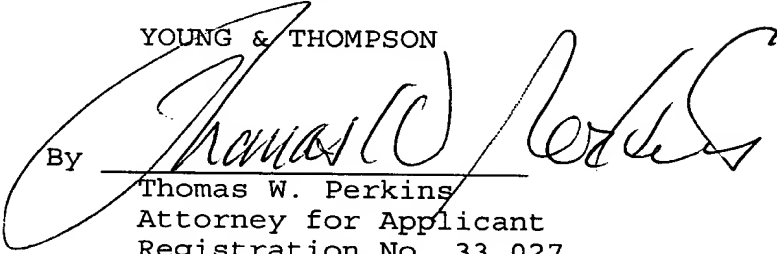
not turned OFF and thus there must be some other way of preventing an afterimage. Accordingly, the present invention senses and responds to the synchronization and video inputs specified in the claims, regardless of the power input, which is the opposite of YASUI et al.

In view of the foregoing comments, it is believed that the present application is in condition for allowance, which is respectfully requested.

Respectfully submitted,

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